EPA

CONTAINS NO CBI

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Comprehensive Assessment Information Rule

REPORTING FORM

When completed, send this form to:

Document Processing Center
Office of Toxic Substances, TS-790
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460
Attention: CAIR Reporting Office

For Agency Use Only:

Date of Receipt: _____

Document Control Number: _____

Docket Number: _____

EPA Form 7710-52

SECTION 1 GENERAL MANUFACTURER, IMPORTER, AND PROCESSOR INFORMATION

PART A GENERAL REPORTING INFORMATION

1.01 This Comprehensive Assessment Information Rule (CAIR) Reporting Form has been completed in response to the Federal Register Notice of..... [0|6] [1|4] [8|9]
(mo. day year)

CBI

[ ] a. If a Chemical Abstracts Service Number (CAS No.) is provided in the Federal Register, list the CAS No. ..... [0|0|0|5|8|4]-[8|4]-[9]

b. If a chemical substance CAS No. is not provided in the Federal Register, list either (i) the chemical name, (ii) the mixture name, or (iii) the trade name of the chemical substance as provided in the Federal Register.

(i) Chemical name as listed in the rule ..... Not Applicable

(ii) Name of mixture as listed in the rule .... Not Applicable

(iii) Trade name as listed in the rule ..... Not Applicable

c. If a chemical category is provided in the Federal Register, report the name of the category as listed in the rule, the chemical substance CAS No. you are reporting on which falls under the listed category, and the chemical name of the substance you are reporting on which falls under the listed category.

Name of category as listed in the rule ..... Not Applicable

CAS No. of chemical substance ..... [ ][ ][ ][ ][ ][ ]-[ ][ ]-[ ]

Name of chemical substance ..... Not Applicable

1.02 Identify your reporting status under CAIR by circling the appropriate response(s).

CBI

Manufacturer 1

[ ] Importer 2

Processor ..... (3)

X/P manufacturer reporting for customer who is a processor 4

X/P processor reporting for customer who is a processor 5

[ ] Mark (X) this box if you attach a continuation sheet.

1.03 Does the substance you are reporting on have an "x/p" designation associated with it in the above-listed Federal Register Notice?

CBI

[ ]

Yes ..... [X] Go to question 1.04

No ..... [ ] Go to question 1.05

1.04 a. Do you manufacture, import, or process the listed substance and distribute it under a trade name(s) different than that listed in the Federal Register Notice? Circle the appropriate response.

CBI

[ ]

Yes 1

No ..... (2)

b. Check the appropriate box below:

[ ] You have chosen to notify your customers of their reporting obligations

Provide the trade name(s) .... Not Applicable

[ ] You have chosen to report for your customers

[ ] You have submitted the trade name(s) to EPA one day after the effective date of the rule in the Federal Register Notice under which you are reporting.

1.05 If you buy a trade name product and are reporting because you were notified of your reporting requirements by your trade name supplier, provide that trade name.

CBI

[ ]

Trade name ..... Not Applicable

Is the trade name product a mixture? Circle the appropriate response.

Yes 1

No 2

1.06 Certification -- The person who is responsible for the completion of this form must sign the certification statement below:

CBI

[ ]

"I hereby certify that, to the best of my knowledge and belief, all information entered on this form is complete and accurate."

Robert W. Hardy (NAME) | Robert W. Hardy (SIGNATURE) | September 7, 1989 (DATE SIGNED)

Group Manager, Environmental Affairs (TITLE) | (602) 441-2944 (TELEPHONE NO.)

[ ] Mark (X) this box if you attach a continuation sheet.

1.07 Exemptions From Reporting -- If you have provided EPA or another Federal agency with the required information on a CAIR Reporting Form for the listed substance within the past 3 years, and this information is current, accurate, and complete for the time period specified in the rule, then sign the certification below. You are required to complete section 1 of this CAIR form and provide any information now required but not previously submitted. Provide a copy of any previous submissions along with your Section 1 submission.

CBI

[ ]

"I hereby certify that, to the best of my knowledge and belief, all required information which I have not included in this CAIR Reporting Form has been submitted to EPA within the past 3 years and is current, accurate, and complete for the time period specified in the rule."

NAME	SIGNATURE	DATE SIGNED
TITLE	( ) TELEPHONE NO.	DATE OF PREVIOUS SUBMISSION

1.08 CBI Certification -- If you have asserted any CBI claims in this report you must certify that the following statements truthfully and accurately apply to all of those confidentiality claims which you have asserted.

CBI

[ ]

"My company has taken measures to protect the confidentiality of the information, and it will continue to take these measures; the information is not, and has not been, reasonably ascertainable by other persons (other than government bodies) by using legitimate means (other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding) without my company's consent; the information is not publicly available elsewhere; and disclosure of the information would cause substantial harm to my company's competitive position."

NAME	SIGNATURE	DATE SIGNED
TITLE	( ) TELEPHONE NO.	

[ ] Mark (X) this box if you attach a continuation sheet.

PART B CORPORATE DATA

1.09 Facility Identification

CBI

[ ]

Name [M|O|T|O|R|O|L|A|_|I|N|C|_|_|_|_|_|_|_|_|_|_|_|_|_|_]

Address [2|1|0|0|_|E|_|E|L|L|I|O|T|_|R|D|_|_|_|_|_|_|_|_|_|_]
Street

[T|E|M|P|E|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_]
City

[A|Z] State [8|5|2|8|2]--[_|_|_|_] Zip

Dun & Bradstreet Number .... [1|4]-[9|7|5]-[6|0|4|1]

EPA ID Number .... [9|8|1|5|2|7|0|3|4]

Employer ID Number .... [3|6|1|1|1|5|8|0]

Primary Standard Industrial Classification (SIC) Code .... [3|6|6|3]

Other SIC Code .... [3|8|1|2]

Other SIC Code .... [3|8|2|9]

1.10 Company Headquarters Identification

CBI

[ ]

Name [M|O|T|O|R|O|L|A|_|I|N|C|_|_|_|_|_|_|_|_|_|_|_|_|_|_]

Address [1|3|0|3|_|E|_|A|L|G|O|N|Q|U|I|N|_|_|_|_|_|_|_|_|_|_]
Street

[S|C|H|A|U|M|B|U|R|G|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_]
City

[I|L] State [6|0|1|9|6]--[_|_|_|_] Zip

Dun & Bradstreet Number .... [0|0]-[1|3|2]-[5|4|6|3]

Employer ID Number .... [3|6|1|1|1|5|8|0]

[ ] Mark (X) this box if you attach a continuation sheet.

1.11 Parent Company Identification

CBI Name [_]

[_] Address [_]
Street

[_]
City

[_][_] State [_][_][_][_][_]--[_][_][_][_] Zip

Dun & Bradstreet Number .... [_][_]-[_][_][_]-[_][_][_][_]

1.12 Technical Contact

CBI Name [G][L][O][R][I][A][_][G][O][W][A][N]

[_] Title [E][N][V][I][R][O][N][M][E][N][T][A][L][_][E][N][G][I][N][E][E][R]

Address [8][2][0][1][_][E][_][M][C][D][O][W][E][L][L]
Street

[S][C][O][T][T][S][D][A][L][E]
City

[A][Z] State [8][5][2][5][2]--[1][4][1][7] Zip

Telephone Number .... [6][0][2]-[4][4][1]-[2][5][9][4]

1.13 This reporting year is from .... [0][1] Mo. [8][8] Year to [1][2] Mo. [8][8] Year

[_] Mark (X) this box if you attach a continuation sheet.

1.14 Facility Acquired -- If you purchased this facility during the reporting year, provide the following information about the seller:

Not Applicable

CBI Name of Seller [_]

[_] Mailing Address [_]
Street

[_]
City

[_][_] [_][_][_][_][_]--[_][_][_][_]
State Zip

Employer ID Number .....[_][_][_][_][_][_][_][_][_]

Date of Sale .....[_][_] [_][_] [_][_]
Mo. Day Year

Contact Person [_]

Telephone Number .....[_][_][_]-[_][_][_]-[_][_][_][_]

1.15 Facility Sold -- If you sold this facility during the reporting year, provide the following information about the buyer:

Not Applicable

CBI Name of Buyer [_]

[_] Mailing Address [_]
Street

[_]
City

[_][_] [_][_][_][_][_]--[_][_][_][_]
State Zip

Employer ID Number .....[_][_][_][_][_][_][_][_][_]

Date of Purchase .....[_][_] [_][_] [_][_]
Mo. Day Year

Contact Person [_]

Telephone Number .....[_][_][_]-[_][_][_]-[_][_][_][_]

[_] Mark (X) this box if you attach a continuation sheet.

1.16 For each classification listed below, state the quantity of the listed substance that was manufactured, imported, or processed at your facility during the reporting year.

CBI

[ ]

Classification	Quantity (kg/yr)
Manufactured	0
Imported	0
Processed (include quantity repackaged)	1.8
Of that quantity manufactured or imported, report that quantity:	
In storage at the beginning of the reporting year	NA *
For on-site use or processing	NA
For direct commercial distribution (including export)	NA
In storage at the end of the reporting year	NA
Of that quantity processed, report that quantity:	
In storage at the beginning of the reporting year	0
Processed as a reactant (chemical producer)	0
Processed as a formulation component (mixture producer)	0
Processed as an article component (article producer)	1.8
Repackaged (including export)	0
In storage at the end of the reporting year	0

* NA means Not Applicable

[ ] Mark (X) this box if you attach a continuation sheet.

PART C IDENTIFICATION OF MIXTURES

1.17 Mixture -- If the listed substance on which you are required to report is a mixture or a component of a mixture, provide the following information for each component chemical. (If the mixture composition is variable, report an average percentage of each component chemical for all formulations.)

CBI

[ ] EN-5 PART A

Component Name	Supplier Name	Average % Composition by Weight (specify precision, e.g., 45% ± 0.5%)
Toluene 2,4 Diisocyanate	CONAP INC.	<15 ± NA
TDI Prepolymer	CONAP INC.	>85 ± NA
		100 ± NA
		Total 100%

[ ] Mark (X) this box if you attach a continuation sheet.

2.04 State the quantity of the listed substance that your facility manufactured, imported, or processed during the 3 corporate fiscal years preceding the reporting year in descending order.

CBI

[ ] Year ending ..... [1][2] Mo. [8][7] Year

Quantity manufactured ..... NA* kg

Quantity imported ..... NA kg

Quantity processed ..... UK kg

Year ending ..... [1][2] Mo. [8][6] Year

Quantity manufactured ..... NA kg

Quantity imported ..... NA kg

Quantity processed ..... UK kg

Year ending ..... [1][2] Mo. [8][5] Year

Quantity manufactured ..... NA kg

Quantity imported ..... NA kg

Quantity processed ..... UK kg

2.05 Specify the manner in which you manufactured the listed substance. Circle all appropriate process types. NA

CBI

[ ]

Continuous process 1

Semicontinuous process 2

Batch process 3

* NA means not Applicable

[ ] Mark (X) this box if you attach a continuation sheet.

2.06 Specify the manner in which you processed the listed substance. Circle all
CBI appropriate process types.

[ ]

Continuous process 1

Semicontinuous process 2

Batch process ..... (3)

2.07 State your facility's name-plate capacity for manufacturing or processing the listed substance. (If you are a batch manufacturer or batch processor, do not answer this
CBI question.)

[ ]

Manufacturing capacity ..... NA* kg/yr

Processing capacity ..... NA kg/yr

2.08 If you intend to increase or decrease the quantity of the listed substance manufactured, imported, or processed at any time after your current corporate fiscal year, estimate the increase or decrease based upon the reporting year's production
CBI volume.

[ ]

	Manufacturing Quantity (kg)	Importing Quantity (kg)	Processing Quantity (kg)
Amount of increase	NA	NA	UK
Amount of decrease	NA	NA	UK

* NA means not applicable.

[ ] Mark (X) this box if you attach a continuation sheet.

2.09 For the three largest volume manufacturing or processing process types involving the listed substance, specify the number of days you manufactured or processed the liste substance during the reporting year. Also specify the average number of hours per day each process type was operated. (If only one or two operations are involved, list those.)

CBI

[ ]

	Days/Year	Average Hours/Day
Process Type #1 (The process type involving the largest quantity of the listed substance.)		
Manufactured	NA*	NA
Processed	145	2
Process Type #2 (The process type involving the 2nd largest quantity of the listed substance.)		
Manufactured	NA	NA
Processed	NA	NA
Process Type #3 (The process type involving the 3rd largest quantity of the listed substance.)		
Manufactured	NA	NA
Processed	NA	NA

2.10 State the maximum daily inventory and average monthly inventory of the listed substance that was stored on-site during the reporting year in the form of a bulk chemical. Not Required

CBI

[ ]

Maximum daily inventory	_____ kg
Average monthly inventory	_____ kg

* NA means not applicable

[ ] Mark (X) this box if you attach a continuation sheet.

2.11 Related Product Types -- List any byproducts, coproducts, or impurities present with the listed substance in concentrations greater than 0.1 percent as it is manufactured, imported, or processed. The source of byproducts, coproducts, or impurities means the source from which the byproducts, coproducts, or impurities are made or introduced into the product (e.g., carryover from raw material, reaction product, etc.).

CBI

[ ]

CAS No.	Chemical Name	Byproduct, Coproduct or Impurity[1]	Concentration (%) (specify ± % precision)	Source of Byproducts, Coproducts, or Impurities
NA	NA	NA	NA	NA

[1]Use the following codes to designate byproduct, coproduct, or impurity:

B = Byproduct
C = Coproduct
I = Impurity

[ ] Mark (X) this box if you attach a continuation sheet.

2.12 Existing Product Types -- List all existing product types which you manufactured, imported, or processed using the listed substance during the reporting year. List the quantity of listed substance you use for each product type as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI
[ ]

a. Product Types[1]	b. % of Quantity Manufactured, Imported, or Processed	c. % of Quantity Used Captively On-Site	d. Type of End-Users[2]
K	100	100	H

[1]Use the following codes to designate product types:

A = Solvent
B = Synthetic reactant
C = Catalyst/Initiator/Accelerator/Sensitizer
D = Inhibitor/Stabilizer/Scavenger/Antioxidant
E = Analytical reagent
F = Chelator/Coagulant/Sequestrant
G = Cleanser/Detergent/Degreaser
H = Lubricant/Friction modifier/Antiwear agent
I = Surfactant/Emulsifier
J = Flame retardant
K = Coating/Binder/Adhesive and additives
L = Moldable/Castable/Rubber and additives
M = Plasticizer
N = Dye/Pigment/Colorant/Ink and additives
O = Photographic/Reprographic chemical and additives
P = Electrodeposition/Plating chemicals
Q = Fuel and fuel additives
R = Explosive chemicals and additives
S = Fragrance/Flavor chemicals
T = Pollution control chemicals
U = Functional fluids and additives
V = Metal alloy and additives
W = Rheological modifier
X = Other (specify) _____

[2]Use the following codes to designate the type of end-users:

I = Industrial
CM = Commercial
CS = Consumer
H = Other (specify) Government

[ ] Mark (X) this box if you attach a continuation sheet.

2.13 Expected Product Types -- Identify all product types which you expect to manufacture, import, or process using the listed substance at any time after your current corporate fiscal year. For each use, specify the quantity you expect to manufacture, import, or process for each use as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI
[ ]

a. Product Types[1]	b. % of Quantity Manufactured, Imported, or Processed	c. % of Quantity Used Captively On-Site	d. Type of End-Users[2]
UK	UK	UK	UK

[1]Use the following codes to designate product types:

A = Solvent
B = Synthetic reactant
C = Catalyst/Initiator/Accelerator/Sensitizer
D = Inhibitor/Stabilizer/Scavenger/Antioxidant
E = Analytical reagent
F = Chelator/Coagulant/Sequestrant
G = Cleanser/Detergent/Degreaser
H = Lubricant/Friction modifier/Antiwear agent
I = Surfactant/Emulsifier
J = Flame retardant
K = Coating/Binder/Adhesive and additives
L = Moldable/Castable/Rubber and additives
M = Plasticizer
N = Dye/Pigment/Colorant/Ink and additives
O = Photographic/Reprographic chemical and additives
P = Electrodeposition/Plating chemicals
Q = Fuel and fuel additives
R = Explosive chemicals and additives
S = Fragrance/Flavor chemicals
T = Pollution control chemicals
U = Functional fluids and additives
V = Metal alloy and additives
W = Rheological modifier
X = Other (specify) _____

[2]Use the following codes to designate the type of end-users:

I = Industrial
CM = Commercial
CS = Consumer
H = Other (specify) _____

[ ] Mark (X) this box if you attach a continuation sheet.

2.14 Final Product -- Complete the following table for each type of final product manufactured, imported, or processed at your facility that contains the listed substance other than as an impurity. The final product does not contain the listed substance. Not Applicable.

CBI

[ ]

a. Product Type[1]	b. Final Product's Physical Form[2]	c. Average % Composition of Listed Substance in Final Product	d. Type of End-Users[3]
—	—	—	—

[1]Use the following codes to designate product types:

A = Solvent
B = Synthetic reactant
C = Catalyst/Initiator/Accelerator/ Sensitizer
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant
E = Analytical reagent
F = Chelator/Coagulant/Sequestrant
G = Cleanser/Detergent/Degreaser
H = Lubricant/Friction modifier/Antiwear agent
I = Surfactant/Emulsifier
J = Flame retardant
K = Coating/Binder/Adhesive and additives
L = Moldable/Castable/Rubber and additives
M = Plasticizer
N = Dye/Pigment/Colorant/Ink and additives
O = Photographic/Reprographic chemical and additives
P = Electrodeposition/Plating chemicals
Q = Fuel and fuel additives
R = Explosive chemicals and additives
S = Fragrance/Flavor chemicals
T = Pollution control chemicals
U = Functional fluids and additives
V = Metal alloy and additives
W = Rheological modifier
X = Other (specify) _____

[2]Use the following codes to designate the final product's physical form:

A = Gas
B = Liquid
C = Aqueous solution
D = Paste
E = Slurry
F1 = Powder
F2 = Crystalline solid
F3 = Granules
F4 = Other solid
G = Gel
H = Other (specify) _____

[3]Use the following codes to designate the type of end-users:

I = Industrial
CM = Commercial
CS = Consumer
H = Other (specify) _____

[ ] Mark (X) this box if you attach a continuation sheet.

2.15 Circle all applicable modes of transportation used to deliver bulk shipments of the
CBI listed substance to off-site customers. — Not Applicable

[ ] Truck 1

Railcar 2

Barge, Vessel 3

Pipeline 4

Plane 5

Other (specify) _____ 6

2.16 Customer Use -- Estimate the quantity of the listed substance used by your customers or prepared by your customers during the reporting year for use under each category
CBI of end use listed (i-iv). Not Applicable

[ ]

Category of End Use

i. Industrial Products

Chemical or mixture ..... — kg/yr

Article ..... — kg/yr

ii. Commercial Products

Chemical or mixture ..... — kg/yr

Article ..... — kg/yr

iii. Consumer Products

Chemical or mixture ..... — kg/yr

Article ..... — kg/yr

iv. Other

Distribution (excluding export) ..... — kg/yr

Export ..... — kg/yr

Quantity of substance consumed as reactant ..... — kg/yr

Unknown customer uses ..... — kg/yr

[ ] Mark (X) this box if you attach a continuation sheet.

SECTION 3 PROCESSOR RAW MATERIAL IDENTIFICATION

PART A GENERAL DATA

3.01 Specify the quantity purchased and the average price paid for the listed substance for each major source of supply listed. Product trades are treated as purchases.
CBI The average price is the market value of the product that was traded for the listed substance.
[ ]

Source of Supply	Quantity (kg)	Average Price ($/kg)
The listed substance was manufactured on-site.	NA*	NA
The listed substance was transferred from a different company site.	NA	NA
The listed substance was purchased directly from a manufacturer or importer.	NA	NA
The listed substance was purchased from a distributor or repackager.	NA	NA
The listed substance was purchased from a mixture producer.	59.8	37.21

3.02 Circle all applicable modes of transportation used to deliver the listed substance to
CBI your facility.
[ ]

Truck ..... (1)
Railcar 2
Barge, Vessel 3
Pipeline 4
Plane 5
Other (specify) _____ 6

* NA means not applicable.

[ ] Mark (X) this box if you attach a continuation sheet.

3.03 a. Circle all applicable containers used to transport the listed substance to your CBI facility.

[ ]

Bags 1

Boxes 2

Free standing tank cylinders 3

Tank rail cars 4

Hopper cars 5

Tank trucks 6

Hopper trucks 7

Drums 8

Pipeline 9

Other (specify) Can ..... (10)

b. If the listed substance is transported in pressurized tank cylinders, tank rail cars, or tank trucks, state the pressure of the tanks. Not Applicable

Tank cylinders ..... — mmHg

Tank rail cars ..... — mmHg

Tank trucks ..... — mmHg

[ ] Mark (X) this box if you attach a continuation sheet.

PART B RAW MATERIAL IN THE FORM OF A MIXTURE

3.04 If you obtain the listed substance in the form of a mixture, list the trade name(s) of the mixture, the name of its supplier(s) or manufacturer(s), an estimate of the CBI average percent composition by weight of the listed substance in the mixture, and the amount of mixture processed during the reporting year.

[ ]

Trade Name	Supplier or Manufacturer	Average % Composition by Weight (specify ± % precision)	Amount Processed (kg/yr)
EN-5	CONAP INC	13 ± NA	13.1

[ ] Mark (X) this box if you attach a continuation sheet.

PART C RAW MATERIAL VOLUME

3.05 CBI [ ] State the quantity of the listed substance used as a raw material during the reporting year in the form of a class I chemical, class II chemical, or polymer, and the percent composition, by weight, of the listed substance.

	Quantity Used (kg/yr)	% Composition by Weight of Listed Substance in Raw Material (specify ± % precision)
Class I chemical	13.1	13 ± NA
Class II chemical	Not Applicable	Not Applicable
Polymer	Not Applicable	Not Applicable

[ ] Mark (X) this box if you attach a continuation sheet.

SECTION 4 PHYSICAL/CHEMICAL PROPERTIES

General Instructions:

If you are reporting on a mixture as defined in the glossary, reply to questions in Section 4 that are inappropriate to mixtures by stating "NA -- mixture."

For questions 4.06-4.15, if you possess any hazard warning statement, label, MSDS, or other notice that addresses the information requested, you may submit a copy or reasonable facsimile in lieu of answering those questions which it addresses.

PART A PHYSICAL/CHEMICAL DATA SUMMARY

4.01 Specify the percent purity for the three major[1] technical grade(s) of the listed substance as it is manufactured, imported, or processed. Measure the purity of the substance in the final product form for manufacturing activities, at the time you import the substance, or at the point you begin to process the substance.

CBI

[ ] Not Applicable - mixture

	Manufacture	Import	Process
Technical grade #1	_____% purity	_____% purity	_____% purity
Technical grade #2	_____% purity	_____% purity	_____% purity
Technical grade #3	_____% purity	_____% purity	_____% purity

[1] Major = Greatest quantity of listed substance manufactured, imported or processed.

4.02 Submit your most recently updated Material Safety Data Sheet (MSDS) for the listed substance, and for every formulation containing the listed substance. If you possess an MSDS that you developed and an MSDS developed by a different source, submit your version. Indicate whether at least one MSDS has been submitted by circling the appropriate response.

Yes ..... (1)

No 2

Indicate whether the MSDS was developed by your company or by a different source.

Your company 1

Another source ..... (2)

[ ] Mark (X) this box if you attach a continuation sheet.

C O N A P I N C .
1405 Buffalo St.
Olean, New York 14760
716/372-9650

========== MATERIAL SAFETY DATA SHEET ==========

Note: This form is to be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Blank spaces are not permitted.

========== I. IDENTIFICATION ==========

Trade Name Conathane EN-5 Part A Date:5/25/89

Chemical Name, common name: Complex Mixture; Polyurethane Prepolymer

========== II. HAZARDOUS INGREDIENTS ==========

Chemical Names	CAS No.	%	ACGIH(TLV)	OSHA(PEL)	Other
Toluene 2,4 Diisocyanate	584-84-9	<15%	.005ppm TWA	.005ppm TWA	.02ppm STEL ND

Material may present a dust hazard if cut, ground or machined after curing.

========== III. PHYSICAL DATA ==========

Boiling Point ND !Specific Gravity (H2O=1) 1.06
Vapor Pressure,mm Hg ND !Vapor Density (air=1) ND
Melting Pt./Range ND !Evaporation rate (Ether=1) ND
Solubility in Water: REACTS!Physical State: LIQUID
Percent volatile by volume:Negligible
Appearance and Odor: Liquid; For TDI Sharp pungent (odor threshold greater than TLV)

========== IV. FIRE AND EXPLOSION DATA ==========

Flash Point,F (Method): > 260 F PMCC
Flammable Limits ND LEL ND UEL ND
Extinguishing Materials:
-XX-Water Spray -XX-Dry Chemical -XX-Carbon Dioxide
-XX-Foam -ND-Other:
Special Firefighting Procedures/Unusual Fire or Explosion Hazards:
Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by fire fighters. No skin surface should be exposed. During a fire TDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. At temperatures greater than 350 F TDI forms carbodiimides with the release of CO2 which can cause pressure build-up in closed containers. Explosive rupture is possible. Therefore, use cold water to cool fire-exposed containers.

========== V. HEALTH HAZARD INFORMATION ==========

ACUTE TOXICITY (Routes of entry)
Inhalation:
LC50.(4 hr.): Range 16-50ppm for 1-4 hr (Rat) on TDI. TDI

vapors or mist at concentrations above the TLV can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Persons with a preexisting, nonspecific bronchial hyperactivity can respond to concentrations below the TLV with similar symptoms as well as asthma attack. Exposure well above the TLV may lead to bronchitis. bronchial spasm and pulmonary edema (fluid in the lungs). These effects are usually reversible. Chemical or hypersensitive pneumonitis, with flu-like symptoms (e.g. fever, chills),has also been reported. These symptoms can be delayed up to several hours after exposure.

Ingestion:

ORAL,LD50 > 5800 mg/kg (Rats). Can result in irritation and corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

Eye Contact:

Strongly irritating (Rabbits) OECD Guidelines. Liquid, aerosols or vapors are severely irritating and can cause pain, tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. however, damage is usually reversible.

Skin Contact:

Skin sensitizer in guinea pigs. One study with guinea pigs reported that repeated skin contact with TDI caused respiratory sensitization. Isocyanates react with skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove.

Skin Absorption:

ND

CHRONIC TOXICITY

Carcinogenicity:

--X-Yes: --X---NTP --X----IARC ----Federal OSHA

In a DRAFT of a lifetime bioassay, the National Toxicology Program reported that TDI caused an increase in the number of tumors in exposed rats over those counted in non-exposed rats. The TDI was administered by gavage where TDI was introduced into the stomach through a tube. In lifetime inhalation studies conducted by Hazelton Labs for the International Isocyanate Institute, TDI did NOT demonstrate carcinogenic activity in rats or mice.

Target Organ Affected:

No specific information available.

Effects of Overexposure:

Inhalation:
Inhalation of TDI vapors at concentrations above allowable limits can produce irritation of the mucous membranes in the respiratory tract resulting in running nose, sore throat, productive cough and a reduction in lung function (breathing obstruction). As a result of previous repeated overexposures or a single large dose, certain individuals may develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the TLV. Another type of response is hyperreactivity or hypersensitivity, in which persons, (as a result of a previous repeated overexposure or large single dose),can respond to small TDI concentrations at levels well below the .02ppm. Symptoms could be immediate or delayed and include chest tightness, wheezing, cough, shortness of breath or asthmatic attack. Hypersensitivity pneumonitis (with similar respiratory symptoms and fever which has been delayed) has also been reported. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Chronic overexposure to isocyanate has also been reported to cause lung damage (including decrease in lung function) which may be permanent. Sensitization can either be temporary or permanent.
Eyes:
Liquid, vapors or aerosols are severely irritating to the eyes and can cause tears. Prolonged vapor contact may cause conjunctivitis. Corneal injury can occur which can be slow to heal; however damage is usually reversible.
Skin:
TDI reacts with skin protein and tissue moisture and can cause localized irritation as well as discoloration. Prolonged contact could produce reddening, swelling, or blistering and, in some individuals, skin sensitization resulting in dermatitis. Once sensitized a individual can develop recurring symptoms as a result of exposure to vapor.
Ingestion:
Ingestion could result in irritation and some corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

Medical Conditions Aggravated By Exposure
Asthma, other respiratory disorders (bronchitis, emphysema, bronchial hyperreactivity), skin allergies, eczema.

FIRST AID: EMERGENCY PROCEDURES
Eye Contact:
Flush with clean, lukewarm water (low pressure) for at least 15 minutes, occasionally lifting eyelids, and obtain medical attention. Refer individual to an ophthalmologist for immediate follow-up.
Skin Contact:
Remove contaminated clothing. Wash effected areas thoroughly with soap or tincture of green soap and water. Wash contaminated clothing thoroughly before reuse. For severe exposures, get under safety shower, remove clothing under shower,get medical attention, and consult physician.
Inhalation:
Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention. Asthmatic-type symptoms may develop and be immediate or delayed up to several hours. Consult physician.
Ingested:
Do not induce vomiting. Give 12 fl. oz. of milk or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Consult physician.
Recommendations to Physician:
Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic steroid preparation frequently. Workplace vapors have produced reversible corneal epithelial edema impairing vision. This compound is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burns. There is no specific antidote for ingestion treat symptomatically. Inducing vomiting is contraindicated because of the irritating nature of this compound. TDI is a known pulmonary sensitizer. Treatment is essentially symptomatic. An individual having a skin or pulmonary sensitization reaction to this material should be removed from exposure to any isocyanate.

========== VI. REACTIVITY DATA ==========

Stability: --XX-Stable -NA--Unstable
Conditions to Avoid: Temperatures higher than recommended in product literature.
Incompatibility (materials to avoid):
Water, short chain alcohols, amines
Hazardous Decomposition Products
By heat and fire: carbon dioxide, carbon monoxide, oxides of nitrogen and traces of hydrogen cyanide, TDI.
Hazardous Polymerization:NA-May Occur X-Will not occur
Conditions to avoid:
ND

======== VII. SPILL, LEAK AND DISPOSAL PROCEDURES =======

Steps to be taken if material is released or spilled:
Consult section VIII for proper protective equipment.

Cover the spill with sawdust, vermiculite, Fuller's earth or other absorbent material. Pour decontamination solution over the spill area and allow to react for at least 10 minutes. Collect the material in open top containers and add additional amounts of decontamination solution. Remove containers to a safe place, cover loosely, and allow to stand for 24 to 48 hours. Wash down spill area with decontamination solutions. Decontamination solutions: non-ionic surfactant Union Carbide's Tergitol TMN-10(20%) and water (80%); or concentrated ammonia (3-8%), detergent (2%), and water (90%). During spill clean-up, a self contained breathing apparatus or air line respirator and protective clothing must be worn. (See section VIII).
Reportable Quantity CERCLA: 100lbs
Waste Disposal Method:
Dispose according to any Local, State and Federal Regulations.

========== VIII. SPECIAL HANDLING INFORMATION ==========

Respiratory Protection:
A positive pressure air-supplied respirator is required whenever TDI concentrations exceed the Short-Term Exposure or Ceiling Limit of .02ppm or exceed the 8 hour Time Weighted Average TLV of 0.005 ppm. An air supplied respirator must also be worn during spray application, even if exhaust ventilation is used. For non-spray , short-term(less than 1 hour) situations where concentrations are near the TLV, a full face, air-purifying respirator equipped with organic cartridges or canisters can be used. However, TDI has poor warning properties since the odor at which TDI can be smelled is substantially higher than the 0.02 ppm. Therefore, proper fit and timely replacement of filter elements must be ensured. Observe OSHA regulations for respirator use. (29CFR 1910.134).
Ventilation:
Local exhaust should be used to maintain levels below the TLV whenever TDI containing material is handled, processed, or spray-applied. At normal room temperatures (70 F) TDI levels quickly exceed the TLV unless properly ventilated. Standard reference sources regarding industrial ventilation (e.g.,ACGIH INDUSTRIAL VENTILATION) should be consulted for guidance about adequate ventilation.
Protective Gloves:Chemical resistant gloves (butyl rubber, nitrile rubber, polyvinyl alcohol). However, please note that PVA degrades in water.
Eye Protection:
Liquid chemical goggles or full face shield should be worn. Contact lenses should not be worn.
Other Protective Clothing or Equipment:Safety showers and eyewash stations should be available. Cover as much of exposed skin as possible with appropriate clothing.

Work Practices, hygienic practices
Educate and train employees in safe use of product. Follow all label instructions.

========== IX SPECIAL PRECAUTIONS ==========

Handling and Storage:
Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspect.
Other Precautions:
Avoid contact with eyes and skin. Do not breathe the vapors.

========== X ADDITIONAL INFORMATION ==========

SARA Title III Requirements:
TDI is on the Extremely Hazardous Substance.

Chemical Name	Section: 302	CERCLA 313
Toluene 2,4 Diisocyanate	TPQ-500 LBS	RQ-100 LBS	YES

T.S.C.A. Status: On Inventory

Name(print):George C. Karpin !This formulation is subject
Signature: George C. Karpin !to change without notice.
Title:Toxicological Coordinator!In case of accident use the
Date of last revision5/25/89!phone number provided.

To the best of our knowledge, the information contained herein is accurate and meets all state and federal guidelines. However,CONAP INC.does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of the suitability of any material is the sole responsibility of the user.

//

Date approved 5/26/89 Approved: [signature]
ND=Not Determined
NA=Not Applicable
5/24/89 Approved: [signature]

4.03 Submit a copy or reasonable facsimile of any hazard information (other than an MSDS) that is provided to your customers/users regarding the listed substance or any formulation containing the listed substance. Indicate whether this information has been submitted by circling the appropriate response.

Not Applicable - The articles the customer receives do not contain the listed substance.

Yes 1

No 2

4.04 For each activity that uses the listed substance, circle all the applicable number(s) corresponding to each physical state of the listed substance during the activity listed. Physical states for importing and processing activities are determined at the time you import or begin to process the listed substance. Physical states for manufacturing, storage, disposal and transport activities are determined using the final state of the product.

CBI

[ ]

	Physical State				
Activity	Solid	Slurry	Liquid	Liquified Gas	Gas
Manufacture	1	2	3	4	5
Import	1	2	3	4	5
Process	1	2	(3)	4	5
Store	(1)	2	(3)	4	5
Dispose	1	2	3	4	5
Transport	1	2	3	4	5

[ ] Mark (X) this box if you attach a continuation sheet.

4.05 Particle Size -- If the listed substance exists in particulate form during any of the following activities, indicate for each applicable physical state the size and the percentage distribution of the listed substance by activity. Do not include particles ≥10 microns in diameter. Measure the physical state and particle sizes for importing and processing activities at the time you import or begin to process the listed substance. Measure the physical state and particle sizes for manufacturing storage, disposal and transport activities using the final state of the product.

CBI

[ ] Not Applicable

Physical State		Manufacture	Import	Process	Store	Dispose	Transport
Dust	<1 micron						
	1 to <5 microns						
	5 to <10 microns						
Powder	<1 micron						
	1 to <5 microns						
	5 to <10 microns						
Fiber	<1 micron						
	1 to <5 microns						
	5 to <10 microns						
Aerosol	<1 micron						
	1 to <5 microns						
	5 to <10 microns						

[ ] Mark (X) this box if you attach a continuation sheet.

SECTION 5 ENVIRONMENTAL FATE

PART A RATE CONSTANTS AND TRANSFORMATION PRODUCTS

5.01 Indicate the rate constants for the following transformation processes.

a. Photolysis:

Absorption spectrum coefficient (peak) .... UK (1/M cm) at UK nm

Reaction quantum yield, ϕ ..... UK at UK nm

Direct photolysis rate constant, k_p, at ... UK 1/hr UK latitude

b. Oxidation constants at 25°C:

For $^1O_2$ (singlet oxygen), k_{ox} ..... UK 1/M hr

For RO_2 (peroxy radical), k_{ox} ..... UK 1/M hr

c. Five-day biochemical oxygen demand, BOD_5 ... UK mg/l

d. Biotransformation rate constant:

For bacterial transformation in water, k_b... UK 1/hr

Specify culture ..... UK

e. Hydrolysis rate constants:

For base-promoted process, k_B ..... UK 1/M hr

For acid-promoted process, k_A ..... UK 1/M hr

For neutral process, k_N ..... UK 1/hr

f. Chemical reduction rate (specify conditions) UK

g. Other (such as spontaneous degradation) ... UK

[ ] Mark (X) this box if you attach a continuation sheet.

PART B PARTITION COEFFICIENTS

5.02 a. Specify the half-life of the listed substance in the following media.

Media	Half-life (specify units)
Groundwater	UK
Atmosphere	UK
Surface water	UK
Soil	UK

b. Identify the listed substance's known transformation products that have a half-life greater than 24 hours.

CAS No.	Name	Half-life (specify units)		Media
UK	UK	UK	in	UK
			in	
			in	
			in	

5.03 Specify the octanol-water partition coefficient, K_{ow} ... UK at 25°C

Method of calculation or determination ..... UK

5.04 Specify the soil-water partition coefficient, K_d ..... UK at 25°C

Soil type ..... UK

5.05 Specify the organic carbon-water partition coefficient, K_{oc} ..... UK at 25°C

5.06 Specify the Henry's Law Constant, H ..... UK atm-m^3/mole

[ ] Mark (X) this box if you attach a continuation sheet.

5.07 List the bioconcentration factor (BCF) of the listed substance, the species for which it was determined, and the type of test used in deriving the BCF.

Bioconcentration Factor	Species	Test[1]
UK	UK	UK

[1]Use the following codes to designate the type of test:

F = Flowthrough
S = Static

[ ] Mark (X) this box if you attach a continuation sheet.

6.04 CBI [ ] For each market listed below, state the quantity sold and the total sales value of the listed substance sold or transferred in bulk during the reporting year.

Not Required

Market	Quantity Sold or Transferred (kg/yr)	Total Sales Value ($/yr)
Retail sales		
Distribution -- Wholesalers		
Distribution -- Retailers		
Intra-company transfer		
Repackagers		
Mixture producers		
Article producers		
Other chemical manufacturers or processors		
Exporters		
Other (specify)		
_____		

6.05 CBI [ ] Substitutes -- List all known commercially feasible substitutes that you know exist for the listed substance and state the cost of each substitute. A commercially feasible substitute is one which is economically and technologically feasible to use in your current operation, and which results in a final product with comparable performance in its end uses.

Substitute	Cost ($/kg)
UK	UK

[ ] Mark (X) this box if you attach a continuation sheet.

SECTION 7 MANUFACTURING AND PROCESSING INFORMATION

General Instructions:

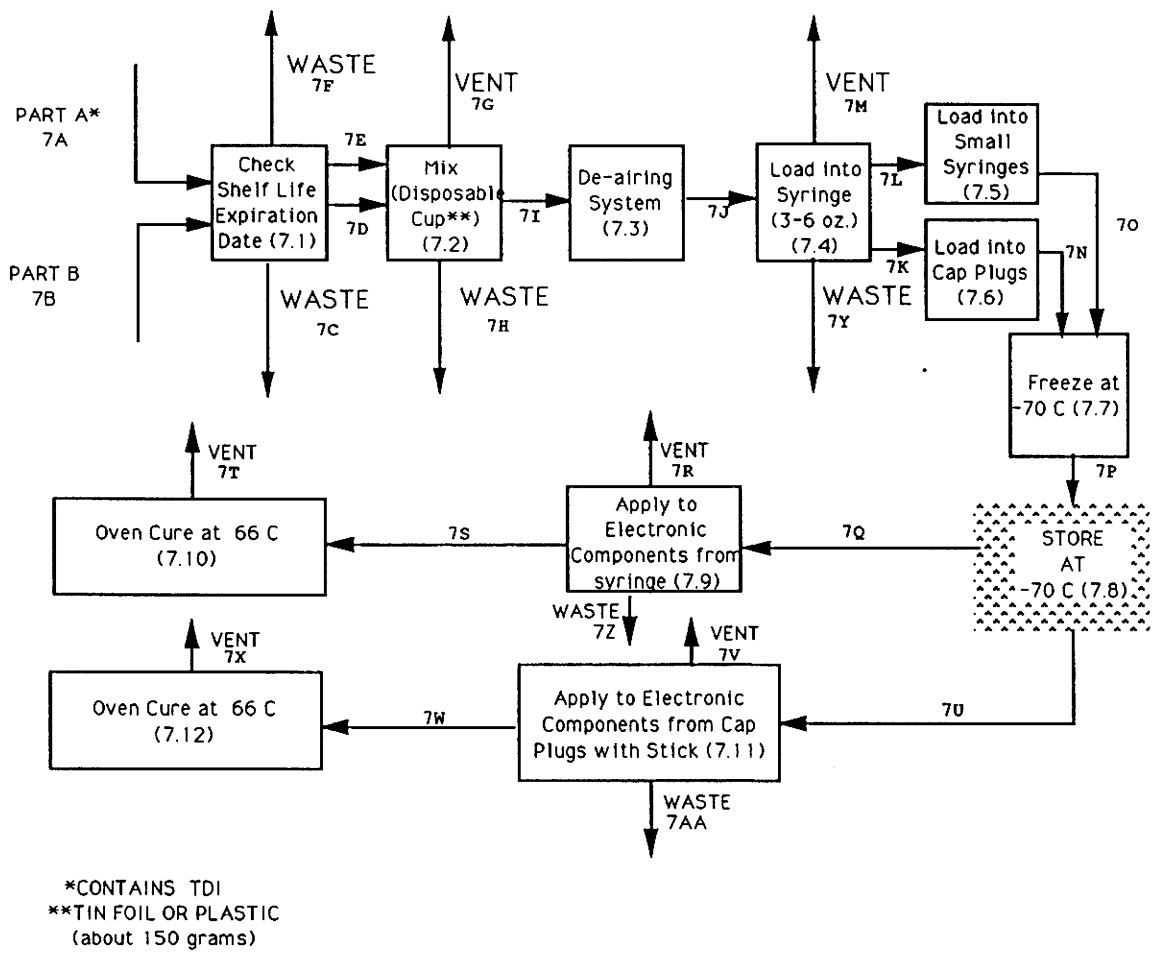
For questions 7.04-7.06, provide a separate response for each process block flow diagram provided in questions 7.01, 7.02, and 7.03. Identify the process type from which the information is extracted.

PART A MANUFACTURING AND PROCESSING PROCESS TYPE DESCRIPTION

7.01 In accordance with the instructions, provide a process block flow diagram showing the major (greatest volume) process type involving the listed substance.

CBI

[ ] Process type ..... StaKing, Bonding EN-5



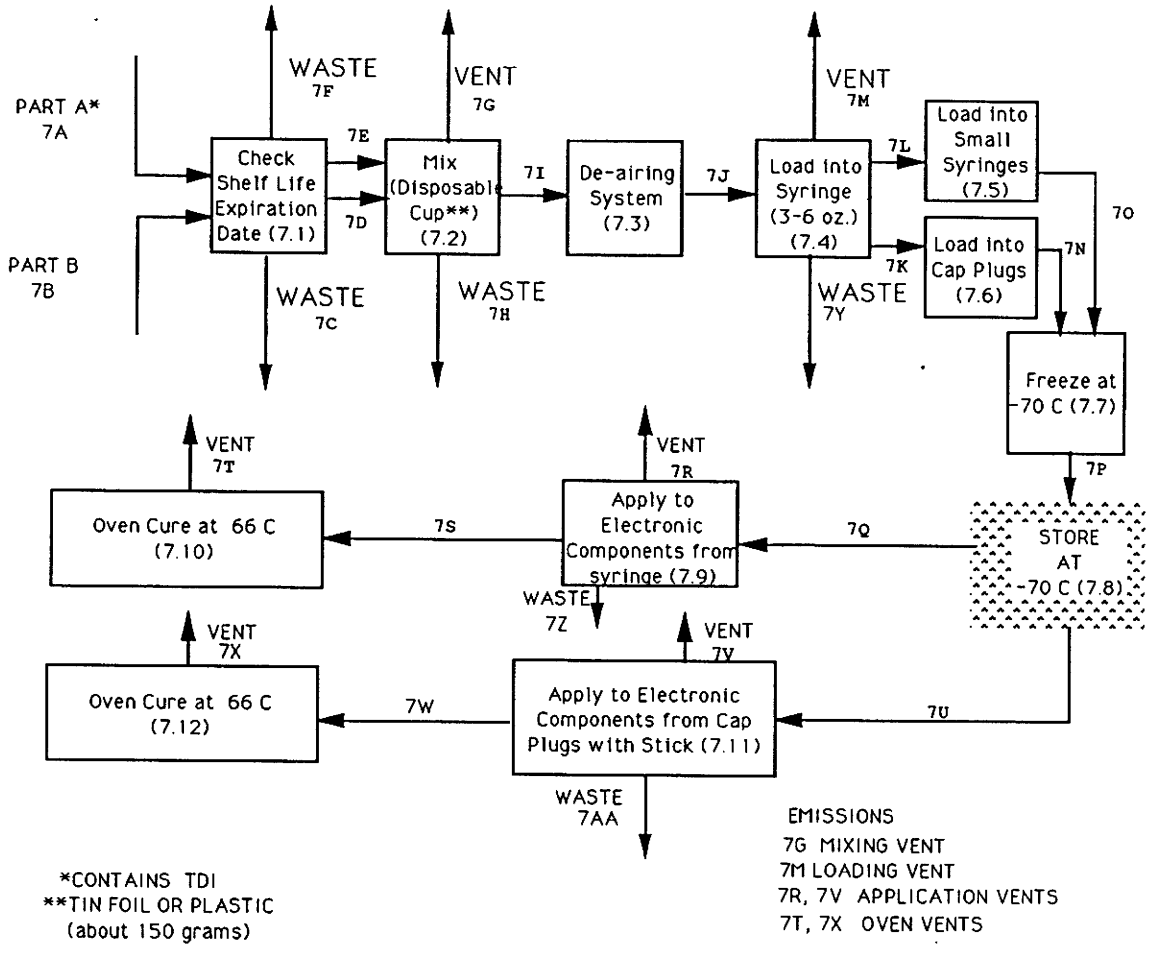
*CONTAINS TDI
**TIN FOIL OR PLASTIC
(about 150 grams)

[ ] Mark (X) this box if you attach a continuation sheet.

7.03 In accordance with the instructions, provide a process block flow diagram showing al process emission streams and emission points that contain the listed substance and which, if combined, would total at least 90 percent of all facility emissions if not treated before emission into the environment. If all such emissions are released from one process type, provide a process block flow diagram using the instructions for question 7.01. If all such emissions are released from more than one process type, provide a process block flow diagram showing each process type as a separate block.

CBI

[ ] Process type ..... Staking, Bonding EN-5



[ ] **Mark (X) this box if you attach a continuation sheet.**

7.04 Describe the typical equipment types for each unit operation identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... Staking, Bonding EN-5

Unit Operation ID Number	Typical Equipment Type	Operating Temperature Range (°C)	Operating Pressure Range (mm Hg)	Vessel Composition
7.1	none	Not Applicable	Not Applicable	Not Applicable
7.2	cup	ambient	atmospheric	plastic or tinfoil
7.3	De-airing Chamber	ambient	-760	glass
7.4	Syringe	ambient	atmospheric	plastic
7.5	Syringe	ambient	atmospheric	plastic
7.6	cap plugs	ambient	atmospheric	plastic
7.7	freezer	-70°C	atmospheric	steel
7.8	freezer	-70°C	atmospheric	steel
7.9	syringe	ambient	atmospheric	plastic
7.10	oven	66°C	atmospheric	steel / stainless steel

☒ Mark (X) this box if you attach a continuation sheet.

7.04 Describe the typical equipment types for each unit operation identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... Staking, Bonding EN-5

Unit Operation ID Number	Typical Equipment Type	Operating Temperature Range (°C)	Operating Pressure Range (mm Hg)	Vessel Composition
7.11	cap plugs	ambient	atmospheric	plastic
7.12	oven	66	atmospheric	steel/ stainless steel

[ ] Mark (X) this box if you attach a continuation sheet.

7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... Staking, Bonding EN-5

Process Stream ID Code	Process Stream Description	Physical State[1]	Stream Flow (kg/yr)
7A	EN-5 Part A	OL	59.8
7B	EN-5 Part B	OL	14.9
7C	Expired EN-5 Part B	OL	11.7
7D	EN-5 Part B	OL	3.2
7E	EN-5 Part A	OL	13.1
7F	Expired EN-5 Part A	OL	46.7
7G	Mixing Vent	GU	98,000
7H	Spent Mixing Cup/ Residual	SO	0.3*

[1]Use the following codes to designate the physical state for each process stream:

GC = Gas (condensible at ambient temperature and pressure)
GU = Gas (uncondensible at ambient temperature and pressure)
SO = Solid
SY = Sludge or slurry
AL = Aqueous liquid
OL = Organic liquid
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

* Does not include weight of the spent mixing cup.

☒ Mark (X) this box if you attach a continuation sheet.

7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... Staking, Bonding EN-5

Process Stream ID Code	Process Stream Description	Physical State[1]	Stream Flow (kg/yr)
7I	Reactive Mix	OL	16.0
7J	Reactive Mix	OL	16.0
7K	Reative Mix	OL	7.85
7L	Reative Mix	OL	7.85
7M	Loading Vent	GU	98,000
7N	Loaded Cap Plugs	OL	7.85
7O	Loaded Syringes	OL	7.85
7P	Frozen CapPlugs/Syringes	SO	15.7

[1]Use the following codes to designate the physical state for each process stream:

GC = Gas (condensible at ambient temperature and pressure)
GU = Gas (uncondensible at ambient temperature and pressure)
SO = Solid
SY = Sludge or slurry
AL = Aqueous liquid
OL = Organic liquid
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

☒ Mark (X) this box if you attach a continuation sheet.

7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... Staking, Bonding EN-5

Process Stream ID Code	Process Stream Description	Physical State[1]	Stream Flow (kg/yr)
7Q	Thawing Mix	SO → OL	7.85
7R	Application Vent	GU	98,000
7S	Curing Article	SO	7.45*
7T	Oven Vent	GU	1,500
7U	Thawing Mix	SO → OL	7.85
7V	Application Vent	GU	98,000
7W	Curing Article	SO	7.45*
7X	Oven Vent	GU	1,500

[1]Use the following codes to designate the physical state for each process stream:

GC = Gas (condensible at ambient temperature and pressure)
GU = Gas (uncondensible at ambient temperature and pressure)
SO = Solid
SY = Sludge or slurry
AL = Aqueous liquid
OL = Organic liquid
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

* Does not include weight of article.

☒ Mark (X) this box if you attach a continuation sheet.

7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... Staking, Bonding EN-5

Process Stream ID Code	Process Stream Description	Physical State[1]	Stream Flow (kg/yr)
7Y	Reacted Waste	SO	0.3 *
7AA	Reacted Waste Residual	SO	0.4 *
7Z	Reacted Waste Residual	SO	0.4 *

[1] Use the following codes to designate the physical state for each process stream:

GC = Gas (condensible at ambient temperature and pressure)
GU = Gas (uncondensible at ambient temperature and pressure)
SO = Solid
SY = Sludge or slurry
AL = Aqueous liquid
OL = Organic liquid
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

* Does not include weight of spent syringes.

[ ] Mark (X) this box if you attach a continuation sheet.

7.06 Characterize each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the CBI instructions for further explanation and an example.)

[ ] Process type ..... Staking, Bonding EN-5

a. Process Stream ID Code	b. Known Compounds[1]	c. Concentrations[2,3] (% or ppm)	d. Other Expected Compounds	e. Estimated Concentrations (% or ppm)
7A	Toluene 2,4-Diisocyanate	<15%	NA	NA
	TDI Prepolymer (from MSDS)	>85%	NA	NA
7B	Ethohexadiol *	50-70%	NA	NA
	Phenylmercuric Oleate	<10%	NA	NA
	Stoddard Solvent	<10%	NA	NA
	N,N-bis(2-hydroxypropyl)aniline	<30%	NA	NA
7C, 7D	Same as 7B	Same as 7B	NA	NA

* break down according to MSDS

7.06 continued below

[X] Mark (X) this box if you attach a continuation sheet.

7.06 Characterize each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the CBI instructions for further explanation and an example.)

[ ] Process type ..... Staking, Bonding EN-5

a. Process Stream ID Code	b. Known Compounds[1]	c. Concentrations[2,3] (% or ppm)	d. Other Expected Compounds	e. Estimated Concentrations (% or ppm)
7E, 7F	Same as 7A	Same as 7A	NA	NA
7I, 7J, 7K, 7L, 7N, 7O, 7P, 7Q, 7U,	urethane	~10 %	NA	NA
	TDI	~10%	NA	NA
	TDI Prepolymer	~65%	NA	NA
	Ethohexadiol	~7 %	NA	NA
	Phenylmercuric Oleate	~1.5%	NA	NA
	Stoddard Solvent	~1.5%	NA	NA
	N,N-bis(2-hydroxypropyl) aniline	5 %	NA	NA
	(E, V)			

7.06 continued below

☒ Mark (X) this box if you attach a continuation sheet.

7.06 Characterize each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the CBI instructions for further explanation and an example.)

[ ] Process type ..... Staking, Bonding EN-5

a. Process Stream ID Code	b. Known Compounds[1]	c. Concentrations[2,3] (% or ppm)	d. Other Expected Compounds	e. Estimated Concentrations (% or ppm)
7S, 7W	urethane	~20%	NA	NA
	TDI	~7%		
	IDI Prepolymer	~60%		
	Ethohexadiol	5%		
	Phenylmercuric Oleate	~5%		
	Stoddard Solvent	~3%		
	N,N-bis(2-hydroxy-propyl aniline) (E)(W)	5%		
7G, 7M, 7R, 7V	Air	>99.99999%	NA	NA
	TDI	< 0.00001%		

7.06 continued below

☒ Mark (X) this box if you attach a continuation sheet.

7.06 Characterize each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the CBI instructions for further explanation and an example.)

[ ] Process type ..... Staking, bonding EIU-5

a. Process Stream ID Code	b. Known Compounds[1]	c. Concentrations[2,3] (% or ppm)	d. Other Expected Compounds	e. Estimated Concentrations (% or ppm)
7H, 7Y	urethane	93.5%	NA	NA
7Z, 7AA	Phenylmercuric Oleate	1.5%		
	N,N-bis(2-hydroxy-propyl)aniline (E, W)	5 %		
7T, 7X	Air	>99.99999%	NA	NA
	TDI	< 0.000005%		
	Stoddard Solvent (E, W)	<0.000005%		

7.06 continued below

[ ] Mark (X) this box if you attach a continuation sheet.

SECTION 8 RESIDUAL TREATMENT GENERATION, CHARACTERIZATION, TRANSPORTATION, AND MANAGEMENT

General Instructions:

For questions 8.04-8.06, provide a separate response for each residual treatment block flow diagram provided in question 8.01, 8.02 or 8.03. Identify the process type from which the information is extracted.

For questions 8.05-8.33, the Stream Identification Codes are those process streams listed in either the Section 7 or Section 8 block flow diagrams which contain residuals for each applicable waste management method.

For questions 8.07-8.33, if residuals are combined before they are handled, list those Stream Identification Codes on the same line.

Questions 8.09-8.33 refer to the waste management activities involving the residuals identified in either the Section 7 or Section 8 block flow diagrams. Not all Stream Identification Codes used in the sample answers (e.g., for the incinerator questions) have corresponding process streams identified in the block flow diagram(s). These Stream Identification codes are for illustrative purposes only.

For questions 8.11-8.33, if you have provided the information requested on one of the EPA Office of Solid Waste surveys listed below within the three years prior to your reporting year, you may submit a copy or reasonable facsimile in lieu of answering those questions which the survey addresses. The applicable surveys are: (1) Hazardous Waste Treatment, Storage, Disposal, and Recycling Survey; (2) Hazardous Waste Generator Survey; or (3) Subtitle D Industrial Facility Mail Survey.

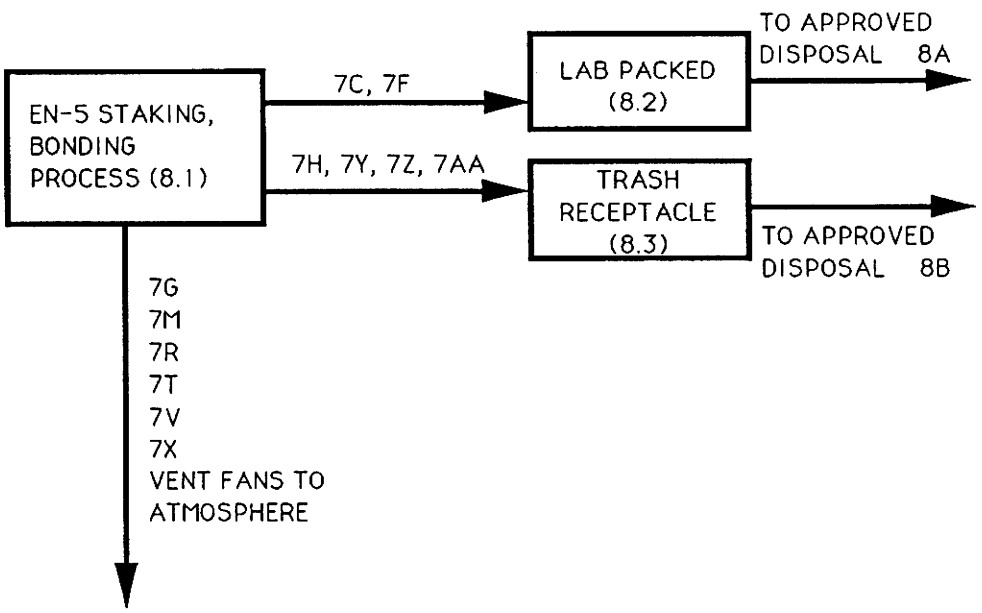
[ ] Mark (X) this box if you attach a continuation sheet.

PART A RESIDUAL TREATMENT PROCESS DESCRIPTION

8.01 In accordance with the instructions, provide a residual treatment block flow diagram which describes the treatment process used for residuals identified in question 7.01.

CBI

[ ] Process type ..... Staking, Bonding EN-5



[ ] Mark (X) this box if you attach a continuation sheet.

PART B RESIDUAL GENERATION AND CHARACTERIZATION

8.05 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

CBI

[ ] Process type ..... Staking, Bonding EN-5

a. Stream ID Code	b. Type of Hazardous Waste[1]	c. Physical State of Residual[2]	d. Known Compounds[3]	e. Concentrations (% or ppm)[4,5,6]	f. Other Expected Compounds	g. Estimated Concentrations (% or ppm)
7C	R	OL (>260°F)	TDI	<15%	NA	NA
			TDI Prepolymer (from MSDS)	>85%		
7F	R	OL (>250°F)	Phenylmercuric Oleate	<10%	NA	NA
			Stoddard Solvent	<10%		
			Ethohexadiol	50-70%		
			N,N-bis (2-hydroxypropyl) aniline	NA	(**)	
7G, 7H, 7R, 7V	*	GU	Air	>99.99999%	NA	NA
			TDI	<0.00001%		
			(E, W)			
7T, 7X	*	GU	Air	>99.99999%	NA	NA
			TDI	<0.000005%		
			Stoddard Solvent	<0.000005%		
			(E, W)			

* Not a hazardous waste

** Breakdown from MSDS

8.05 continued below

[ ] Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

[1]Use the following codes to designate the type of hazardous waste:

I = Ignitable
C = Corrosive
R = Reactive
E = EP toxic
T = Toxic
H = Acutely hazardous

[2]Use the following codes to designate the physical state of the residual:

GC = Gas (condensible at ambient temperature and pressure)
GU = Gas (uncondensible at ambient temperature and pressure)
SO = Solid
SY = Sludge or slurry
AL = Aqueous liquid
OL = Organic liquid
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

8.05 continued below

[ ] Mark (X) this box if you attach a continuation sheet.

8.06 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

CBI

[ ] Process type ..... Staking, Bonding EN-5

a. Stream ID Code	b. Waste Description Code[1]	c. Management Method Code[2]	d. Residual Quantities (kg/yr)	e. Management of Residual (%) On-Site	e. Management of Residual (%) Off-Site	f. Costs for Off-Site Management (per kg)	g. Changes in Management Methods
7C	B67	1A	11.7	100	—	—	none
		1ST	11.7	—	100	5.57*	none
		3I	11.7	—	100		none
7F	B67	1A	46.7	100	—	—	none
		1ST	46.7	—	100	5.57*	none
		3I	46.7	—	100		none
7H	B82	1D	0.3	—	100	$0.04	none
7Y	B82	1D	0.3	—	100	$0.04	none

*$5.57/Kg includes cost of incineration and container storage.

[1] Use the codes provided in Exhibit 8-1 to designate the waste descriptions

[2] Use the codes provided in Exhibit 8-2 to designate the management methods

[X] Mark (X) this box if you attach a continuation sheet.

8.06. Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

CBI

[ ] Process type ..... Staking Bonding EW-S

a. Stream ID Code	b. Waste Description Code[1]	c. Management Method Code[2]	d. Residual Quantities (kg/yr)	e. Management of Residual (%) On-Site	e. Management of Residual (%) Off-Site	f. Costs for Off-Site Management (per kg)	g. Changes in Management Methods
7Z	B82	10	0.4	—	100	$0.04	none
7AA	B82	10	0.4	—	100	$0.04	none
7G	B57	M5a	0.005	NA*	NA	NA	NA
7M	B57	M5a	0.005	NA	NA	NA	NA

* NA means Not Applicable

[1]Use the codes provided in Exhibit 8-1 to designate the waste descriptions

[2]Use the codes provided in Exhibit 8-2 to designate the management methods

☒ Mark (X) this box if you attach a continuation sheet.

8.06 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

CBI

[ ] Process type ..... Staking, Bonding EN-5

a. Stream ID Code	b. Waste Description Code[1]	c. Management Method Code[2]	d. Residual Quantities (kg/yr)	e. Management of Residual (%) On-Site	e. Management of Residual (%) Off-Site	f. Costs for Off-Site Management (per kg)	g. Changes in Management Methods
7R	B57	M5a	0.005	NA*	NA	NA	NA
7T	B57	M5a	0.00008	NA	NA	NA	NA
7V	B57	M5a	0.005	NA	NA	NA	NA
7X	B57	M5a	0.00008	NA	NA	NA	NA

* NA means Not Applicable

[1]Use the codes provided in Exhibit 8-1 to designate the waste descriptions

[2]Use the codes provided in Exhibit 8-2 to designate the management methods

[ ] Mark (X) this box if you attach a continuation sheet.

EXHIBIT 8-1.
(Refers to question 8.06(b))

WASTE DESCRIPTION CODES

These waste description codes were developed specifically for this survey to supplement the descriptions listed with the RCRA and other waste codes. (These waste description codes are not regulatory definitions.)

WASTE DESCRIPTION CODES FOR HAZARDOUS WASTE DESCRIBED BY A SINGLE RCRA F, K, P, OR U WASTE CODE

A01 Spent solvent (F001-F005, K086)
A02 Other organic liquid (F001-F005, K086)
A03 Still bottom (F001-F005, K086)
A04 Other organic sludge (F001-F005, K086)
A05 Wastewater or aqueous mixture
A06 Contaminated soil or cleanup residue
A07 Other F or K waste, exactly as described*
A08 Concentrated off-spec or discarded product
A09 Empty containers
A10 Incinerator ash
A11 Solidified treatment residue
A12 Other treatment residue (specify in "Facility Notes")
A13 Other untreated waste (specify in "Facility Notes")

*"Exactly as described" means that the waste matches the description of the RCRA waste code.

INORGANIC LIQUIDS—Waste that is primarily inorganic and highly fluid (e.g., aqueous), with low suspended inorganic solids and low organic content

B01 Aqueous waste with low solvents
B02 Aqueous waste with low other toxic organics
B03 Spent acid with metals
B04 Spent acid without metals
B05 Acidic aqueous waste
B06 Caustic solution with metals but no cyanides
B07 Caustic solution with metals and cyanides
B08 Caustic solution with cyanides but no metals
B09 Spent caustic
B10 Caustic aqueous waste
B11 Aqueous waste with reactive sulfides
B12 Aqueous waste with other reactives (e.g., explosives)
B13 Other aqueous waste with high dissolved solids
B14 Other aqueous waste with low dissolved solids
B15 Scrubber water
B16 Leachate
B17 Waste liquid mercury
B18 Other inorganic liquid (specify in "Facility Notes")

INORGANIC SLUDGES—Waste that is primarily inorganic, with moderate-to-high water content and low organic content; pumpable.

B19 Lime sludge without metals
B20 Lime sludge with metals/metal hydroxide sludge
B21 Wastewater treatment sludge with toxic organics
B22 Other wastewater treatment sludge
B23 Untreated plating sludge without cyanides
B24 Untreated plating sludge with cyanides
B25 Other sludge with cyanides
B26 Sludge with reactive sulfides
B27 Sludge with other reactives
B28 Degreasing sludge with metal scale or filings
B29 Air pollution control device sludge (e.g., fly ash, wet scrubber sludge)
B30 Sediment or lagoon dragout contaminated with organics
B31 Sediment or lagoon dragout contaminated with inorganics only
B32 Drilling mud
B33 Asbestos slurry or sludge
B34 Chloride or other brine sludge
B35 Other inorganic sludge (specify in "Facility Notes")

INORGANIC SOLIDS—Waste that is primarily inorganic and solid, with low organic content and low-to-moderate water content; not pumpable.

B36 Soil contaminated with organics
B37 Soil contaminated with inorganics only
B38 Ash, slag, or other residue from incineration of wastes
B39 Other "dry" ash, slag, or thermal residue
B40 "Dry" lime or metal hydroxide solids chemically "fixed"
B41 "Dry" lime or metal hydroxide solids not "fixed"
B42 Metal scale, filings, or scrap
B43 Empty or crushed metal drums or containers
B44 Batteries or battery parts, casings, cores
B45 Spent solid filters or adsorbents
B46 Asbestos solids and debris
B47 Metal-cyanide salts/chemicals
B48 Reactive cyanide salts/chemicals
B49 Reactive sulfide salts/chemicals
B50 Other reactive salts/chemicals
B51 Other metal salts/chemicals
B52 Other waste inorganic chemicals
B53 Lab packs of old chemicals only
B54 Lab packs of debris only
B55 Mixed lab packs
B56 Other inorganic solids (specify in "Facility Notes")

INORGANIC GASES—Waste that is primarily inorganic with a low organic content and is a gas at atmospheric pressure.

B57 Inorganic gases

ORGANIC LIQUIDS—Waste that is primarily organic and is highly fluid, with low inorganic solids content and low-to-moderate water content.

B58 Concentrated solvent-water solution
B59 Halogenated (e.g., chlorinated) solvent
B60 Nonhalogenated solvent
B61 Halogenated/nonhalogenated solvent mixture
B62 Oil-water emulsion or mixture
B63 Waste oil
B64 Concentrated aqueous solution of other organics
B65 Concentrated phenolics
B66 Organic paint, ink, lacquer, or varnish
B67 Adhesives or expoxies
B68 Paint thinner or petroleum distillates
B69 Reactive or polymerizable organic liquid
B70 Other organic liquid (specify in "Facility Notes")

ORGANIC SLUDGES—Waste that is primarily organic, with low-to-moderate inorganic solids content and water content; pumpable.

B71 Still bottoms of halogenated (e.g., chlorinated) solvents or other organic liquids
B72 Still bottoms of nonhalogenated solvents or other organic liquids
B73 Oily sludge
B74 Organic paint or ink sludge
B75 Reactive or polymerizable organics
B76 Resins, tars, or tarry sludge
B77 Biological treatment sludge
B78 Sewage or other untreated biological sludge
B79 Other organic sludge (specify in "Facility Notes")

ORGANIC SOLIDS—Waste that is primarily organic and solid, with low-to-moderate inorganic content and water content; not pumpable.

B80 Halogenated pesticide solid
B81 Nonhalogenated pesticide solid
B82 Solid resins or polymerized organics
B83 Spent carbon
B84 Reactive organic solid
B85 Empty fiber or plastic containers
B86 Lab packs of old chemicals only
B87 Lab packs of debris only
B88 Mixed lab packs
B89 Other halogenated organic solid
B90 Other nonhalogenated organic solid

ORGANIC GASES—Waste that is primarily organic with low-to-moderate inorganic content and is a gas at atmospheric pressure.

B91 Organic gases

EXHIBIT 8-2.
(Refers to question 8.06(c))

MANAGEMENT METHODS

M1 = Discharge to publicly owned wastewater treatment works
M2 = Discharge to surface water under NPDES
M3 = Discharge to off-site, privately owned wastewater treatment works
M4 = Scrubber: a) caustic; b) water; c) other
M5 = Vent to: a) atmosphere; b) flare; c) other (specify)_____
M6 = Other (specify)_____

TREATMENT AND RECYCLING

Incineration/thermal treatment
1I Liquid injection
2I Rotary or rocking kiln
3I Rotary kiln with a liquid injection unit
4I Two stage
5I Fixed hearth
6I Multiple hearth
7I Fluidized bed
8I Infrared
9I Fume/vapor
10I Pyrolytic destructor
11I Other incineration/thermal treatment

Reuse as fuel
1RF Cement kiln
2RF Aggregate kiln
3RF Asphalt kiln
4RF Other kiln
5RF Blast furnace
6RF Sulfur recovery furnace
7RF Smelting, melting, or refining furnace
8RF Coke oven
9RF Other industrial furnace
10RF Industrial boiler
11RF Utility boiler
12RF Process heater
13RF Other reuse as fuel unit

Fuel Blending
1FB Fuel blending

Solidification
1S Cement or cement/silicate processes
2S Pozzolanic processes
3S Asphaltic processes
4S Thermoplastic techniques
5S Organic polymer techniques
6S Jacketing (macro-encapsulation)
7S Other solidification

Recovery of solvents and liquid organics for reuse
1SR Fractionation
2SR Batch still distillation
3SR Solvent extraction
4SR Thin-film evaporation
5SR Filtration
6SR Phase separation
7SR Dessication
8SR Other solvent recovery

Recovery of metals
1MR Activated carbon (for metals recovery)
2MR Electrodialysis (for metals recovery)
3MR Electrolytic metal recovery
4MR Ion exchange (for metals recovery)
5MR Reverse osmosis (for metals recovery)
6MR Solvent extraction (for metals recovery)
7MR Ultrafiltration (for metals recovery)
8MR Other metals recovery

Wastewater Treatment
After each wastewater treatment type listed below (1WT - 66WT) specify a) tank; or b) surface impoundment (i.e., 63WTa)

Equalization
1WT Equalization

Cyanide oxidation
2WT Alkaline chlorination
3WT Ozone
4WT Electrochemical
5WT Other cyanide oxidation

General oxidation (including disinfection)
6WT Chlorination
7WT Ozonation
8WT UV radiation
9WT Other general oxidation

Chemical precipitation[1]
10WT Lime
11WT Sodium hydroxide
12WT Soda ash
13WT Sulfide
14WT Other chemical precipitation

Chromium reduction
15WT Sodium bisulfite
16WT Sulfur dioxide

8.22 Describe the combustion chamber design parameters for each of the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

CBI

[ ]

Not Required

Incinerator	Combustion Chamber Temperature (°C)		Location of Temperature Monitor		Residence Time In Combustion Chamber (seconds)	
	Primary	Secondary	Primary	Secondary	Primary	Secondary
1	—	—	—	—	—	—
2						
3						

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes 1

No 2

8.23 Complete the following table for the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

CBI

[ ]

Not Applicable

Incinerator	Air Pollution Control Device[1]	Types of Emissions Data Available
1	—	—
2		
3		

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes 1

No 2

[1]Use the following codes to designate the air pollution control device:

S = Scrubber (include type of scrubber in parenthesis)
E = Electrostatic precipitator
O = Other (specify) _____

[ ] Mark (X) this box if you attach a continuation sheet.

SECTION 9 WORKER EXPOSURE

General Instructions:

Questions 9.03-9.25 apply only to those processes and workers involved in manufacturing or processing the listed substance. Do not include workers involved in residual waste treatment unless they are involved in this treatment process on a regular basis (i.e., exclude maintenance workers, construction workers, etc.).

[ ] Mark (X) this box if you attach a continuation sheet.

PART A EMPLOYMENT AND POTENTIAL EXPOSURE PROFILE

9.01 Mark (X) the appropriate column to indicate whether your company maintains records on the following data elements for hourly and salaried workers. Specify for each data element the year in which you began maintaining records and the number of years the CBI records for that data element are maintained. (Refer to the instructions for further explanation and an example.)

[ ]

Data Element	Data are Maintained for: Hourly Workers	Data are Maintained for: Salaried Workers	Year in Which Data Collection Began	Number of Years Records Are Maintained
Date of hire	X	X	1956	*
Age at hire	X	X	1956	*
Work history of individual before employment at your facility	UK	UK	UK	UK.
Sex	X	X	1956	*
Race	X	X	1956	*
Job titles	X	X	1956	*
Start date for each job title	X	X	1956	*
End date for each job title	X	X	1956	*
Work area industrial hygiene monitoring data	X	X	1985	*
Personal employee monitoring data	UK	UK	UK	UK
Employee medical history	X	X	1956	*
Employee smoking history	UK	UK	UK	UK
Accident history	X	X	1956	*
Retirement date	X	X	1956	*
Termination date	X	X	1956	*
Vital status of retirees	X	X	1956	*
Cause of death data	X	X	1956	*

[ ] Mark (X) this box if you attach a continuation sheet.

* Records are maintained indefinetly on all employees even if retired or deceased.

9.02 In accordance with the instructions, complete the following table for each activity in which you engage.

CBI

[ ]

a. Activity	b. Process Category	c. Yearly Quantity (kg)	d. Total Workers	e. Total Worker-Hours
Manufacture of the listed substance	Enclosed	0	0	0
	Controlled Release	0	0	0
	Open	0	0	0
On-site use as reactant	Enclosed	0	0	0
	Controlled Release	1.8	UK	37/yr
	Open	1.8	UK	36/yr
On-site use as nonreactant	Enclosed	0	0	0
	Controlled Release	0	0	0
	Open	0	0	0
On-site preparation of products	Enclosed	0	0	0
	Controlled Release	0	0	0
	Open	0	0	0

[ ] Mark (X) this box if you attach a continuation sheet.

9.03 Provide a descriptive job title for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance.

CBI

[ ]

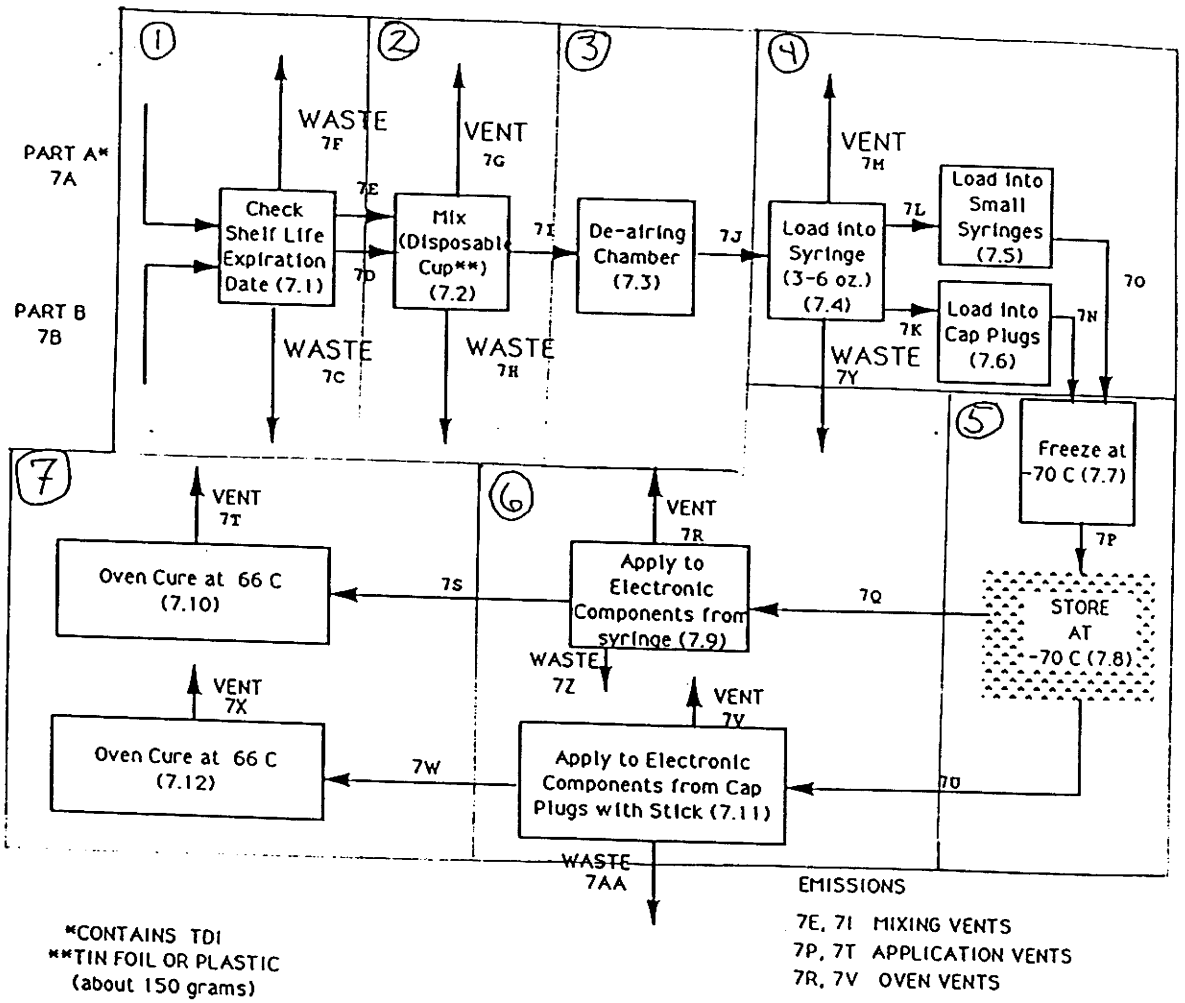
Labor Category	Descriptive Job Title
A	PRODUCTION ASSEMBLER
B	PROCESS TECHNICIAN
C	
D	
E	
F	
G	
H	
I	
J	

[ ] Mark (X) this box if you attach a continuation sheet.

9.04 In accordance with the instructions, provide your process block flow diagram(s) and indicate associated work areas.

CBI

[ ] Process type ..... STAKING & BONDING (CONATHANE EN-5)



[ ] Mark (X) this box if you attach a continuation sheet.

9.05 Describe the various work area(s) shown in question 9.04 that encompass workers who may potentially come in contact with or be exposed to the listed substance. Add any additional areas not shown in the process block flow diagram in question 7.01 or 7.02. Photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... Staking, Bonding (Conathane EN-5)

Work Area ID	Description of Work Areas and Worker Activities
1	Receipt and Storage
2	Assembler mixes material
3	Assembler places Material in De-airing chamber
4	Assembler loads material into syringes/cap plugs
5	Storage in Freezer
6	Apply to components from syringe/cap plug
7	Assembler places/removes from oven
8	
9	
10	

[ ] Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

[ ] Process type ..... STAKING AND BONDING (CONATHANE EN-5)

Work area ..... 2 → 7

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance[1]	Average Length of Exposure Per Day[2]	Number of Days per Year Exposed
A	2	SKIN/INHALATION	OL	A	73
B	2	SKIN/INHALATION	OL	A	72

[1]Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensible at ambient temperature and pressure)
GU = Gas (uncondensible at ambient temperature and pressure; includes fumes, vapors, etc.)
SO = Solid
SY = Sludge or slurry
AL = Aqueous liquid
OL = Organic liquid
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

[2]Use the following codes to designate average length of exposure per day:

A = 15 minutes or less
B = Greater than 15 minutes, but not exceeding 1 hour
C = Greater than one hour, but not exceeding 2 hours
D = Greater than 2 hours, but not exceeding 4 hours
E = Greater than 4 hours, but not exceeding 8 hours
F = Greater than 8 hours

[ ] Mark (X) this box if you attach a continuation sheet.

9.07 For each labor category represented in question 9.06, indicate the 8-hour Time Weighted Average (TWA) exposure levels and the 15-minute peak exposure levels. Photocopy this question and complete it separately for each process type and work area.

CBI

[ ] Process type ..... STAKING & BONDING (CONATHANE EN-5)

Work area ..... 2 → 7

Labor Category	8-hour TWA Exposure Level (ppm, mg/m^3, other-specify)	15-Minute Peak Exposure Level (ppm, mg/m^3, other-specify)
A	UK	UK
B	UK	UK

[ ] Mark (X) this box if you attach a continuation sheet.

PART B WORK PLACE MONITORING PROGRAM

9.08 If you monitor worker exposure to the listed substance, complete the following table.

CBI

[ ]

Not Sampled

Sample/Test	Work Area ID	Testing Frequency (per year)	Number of Samples (per test)	Who Samples[1]	Analyzed In-House (Y/N)	Number of Years Records Maintained
Personal breathing zone	NA*	NA	NA	NA	NA	NA
General work area (air)	NA	NA	NA	NA	NA	NA
Wipe samples	NA	NA	NA	NA	NA	NA
Adhesive patches	NA	NA	NA	NA	NA	NA
Blood samples	NA	NA	NA	NA	NA	NA
Urine samples	NA	NA	NA	NA	NA	NA
Respiratory samples	NA	NA	NA	NA	NA	NA
Allergy tests	NA	NA	NA	NA	NA	NA
Other (specify) _____	NA	NA	NA	NA	NA	NA
Other (specify) _____	NA	NA	NA	NA	NA	NA
Other (specify) _____	NA	NA	NA	NA	NA	NA

* NA means Not Applicable

[1]Use the following codes to designate who takes the monitoring samples:

A = Plant industrial hygienist
B = Insurance carrier
C = OSHA consultant
D = Other (specify) _____

[ ] Mark (X) this box if you attach a continuation sheet.

9.09 For each sample type identified in question 9.08, describe the type of sampling and analytical methodology used for each type of sample.

CBI

[ ]	Sample Type	Sampling and Analytical Methodology
	NA	

9.10 If you conduct personal and/or ambient air monitoring for the listed substance, specify the following information for each equipment type used.

CBI

[ ]	Equipment Type[1]	Detection Limit[2]	Manufacturer	Averaging Time (hr)	Model Number
	NA				

[1]Use the following codes to designate personal air monitoring equipment types:

A = Passive dosimeter
B = Detector tube
C = Charcoal filtration tube with pump
D = Other (specify) _____

Use the following codes to designate ambient air monitoring equipment types:

E = Stationary monitors located within work area
F = Stationary monitors located within facility
G = Stationary monitors located at plant boundary
H = Mobile monitoring equipment (specify) _____
I = Other (specify) _____

[2]Use the following codes to designate detection limit units:

A = ppm
B = Fibers/cubic centimeter (f/cc)
C = Micrograms/cubic meter (μ/m^3)

[ ] Mark (X) this box if you attach a continuation sheet.

9.11 If you conduct routine medical tests for monitoring the health effects of exposure to the listed substance, specify the type and frequency of the tests.

CBI

[ ]	Test Description	Frequency (weekly, monthly, yearly, etc.)
	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

PART C ENGINEERING CONTROLS

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

[ ] Process type ..... Staking, Bonding (Conathane EN-5)

Work area 2-7

Engineering Controls	Used (Y/N)	Year Installed	Upgraded (Y/N)	Year Upgraded
Ventilation:				
Local exhaust	Y	1978	Y	1988
General dilution	Y	1978	Y	1988
Other (specify)				
Vessel emission controls	Y	NA	NA	NA
Mechanical loading or packaging equipment				
Other (specify)				

[ ] Mark (X) this box if you attach a continuation sheet.

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

[ ] Process type ..... NA

Work area .....

Equipment or Process Modification	Reduction in Worker Exposure Per Year (%)
NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

[ ] Process type ..... Staking and Bonding (Conathane EN-5)

Work area 2-7

Equipment Types	Wear or Use (Y/N)
Respirators	N
Safety goggles/glasses	Y
Face shields	Y
Coveralls	N
Bib aprons	Y
Chemical-resistant gloves	Y
Other (specify)	
_____	_____
_____	_____

[ ] Mark (X) this box if you attach a continuation sheet.

9.15 If workers use respirators when working with the listed substance, specify for each process type, the work areas where the respirators are used, the type of respirators used, the average usage, whether or not the respirators were fit tested, and the type and frequency of the fit tests. Photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... N/A

Work Area	Respirator Type	Average Usage[1]	Fit Tested (Y/N)	Type of Fit Test[2]	Frequency of Fit Tests (per year)
	N/A				

[1]Use the following codes to designate average usage:

A = Daily
B = Weekly
C = Monthly
D = Once a year
E = Other (specify) _____

[2]Use the following codes to designate the type of fit test:

QL = Qualitative
QT = Quantitative

[ ] Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

[ ]

Process type ..... Staking & Bonding (Conathane EN-5)

Work area 1-7

Restrict Access to Authorized Workers
Insure Worker Detection & Monitoring Practices
Worker Training Programs
Personal Protective Equipment

9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type .....

Work area .....

Housekeeping Tasks	Less Than Once Per Day	1-2 Times Per Day	3-4 Times Per Day	More Than 4 Times Per Day
Sweeping				
Vacuuming				
Water flushing of floors				
Other (specify)				
Scrub with methyl chloroform		X		

[ ] Mark (X) this box if you attach a continuation sheet.

9.21 Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?

Routine exposure

Yes 1

(No) 2

Emergency exposure

Yes 1

(No) 2

If yes, where are copies of the plan maintained?

Routine exposure: _____

Emergency exposure: _____

9.22 Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.

(Yes) 1

No 2

If yes, where are copies of the plan maintained? ENVIRONMENTAL / SAFETY OFFICE EMERGENCY RESPONSE TEAMS

Has this plan been coordinated with state or local government response organizations? Circle the appropriate response.

(Yes) 1

No 2

9.23 Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.

Plant safety specialist 1

Insurance carrier 2

OSHA consultant 3

Other (specify) INDUSTRIAL HYGIENISTS ..... (4)

[ ] Mark (X) this box if you attach a continuation sheet.

SECTION 10 ENVIRONMENTAL RELEASE

General Instructions:

Complete Part E (questions 10.23-10.35) for each non-routine release involving the listed substance that occurred during the reporting year. Report on all releases that are equal to or greater than the listed substance's reportable quantity value, RQ, unless the release is federally permitted as defined in 42 U.S.C. 9601, or is specifically excluded under the definition of release as defined in 40 CFR 302.3(22). Reportable quantities are codified in 40 CFR Part 302. If the listed substance is not a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and, thus, does not have an RQ, then report releases that exceed 2,270 kg. If such a substance however, is designated as a CERCLA hazardous substance, then report those releases that are equal to or greater than the RQ. The facility may have answered these questions or similar questions under the Agency's Accidental Release Information Program and may already have this information readily available. Assign a number to each release and use this number throughout this part to identify the release. Releases over more than a 24-hour period are not single releases, i.e., the release of a chemical substance equal to or greater than an RQ must be reported as a separate release for each 24-hour period the release exceeds the RQ.

For questions 10.25-10.35, answer the questions for each release identified in question 10.23. Photocopy these questions and complete them separately for each release.

PART A GENERAL INFORMATION

10.01 Where is your facility located? Circle all appropriate responses.

CBI

[ ] Industrial area ..... (1)
Urban area 2
Residential area ..... (3)
Agricultural area 4
Rural area 5
Adjacent to a park or a recreational area 6
Within 1 mile of a navigable waterway 7
Within 1 mile of a school, university, hospital, or nursing home facility ..... (8)
Within 1 mile of a non-navigable waterway 9
Other (specify) _____ 10

[ ] Mark (X) this box if you attach a continuation sheet.

10.02 Specify the exact location of your facility (from central point where process unit is located) in terms of latitude and longitude or Universal Transverse Mercader (UTM) coordinates.

Latitude ..... 33 ° 21 ' 12 "

Longitude ..... 111 ° 53 ' 24 "

UTM coordinates ..... Zone _____, Northing _____, Easting _____

10.03 If you monitor meteorological conditions in the vicinity of your facility, provide the following information. Not Required

Average annual precipitation ..... — inches/year

Predominant wind direction ..... —

10.04 Indicate the depth to groundwater below your facility. Not Required

Depth to groundwater ..... — meters

10.05 For each on-site activity listed, indicate (Y/N/NA) all routine releases of the listed substance to the environment. (Refer to the instructions for a definition of Y, N, and NA.)

CBI

[ ]

On-Site Activity	Environmental Release		
	Air	Water	Land
Manufacturing	NA	NA	NA
Importing	NA	NA	NA
Processing	Y	N	N
Otherwise used	NA	NA	NA
Product or residual storage	N	N	N
Disposal	NA	NA	NA
Transport	NA	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

10.06 Provide the following information for the listed substance and specify the level of precision for each item. (Refer to the instructions for further explanation and an example.)

CBI

[ ]

Quantity discharged to the air	0.02	kg/yr ±	UK %
Quantity discharged in wastewaters	0	kg/yr ±	0 %
Quantity managed as other waste in on-site treatment, storage, or disposal units	0	kg/yr ±	0 %
Quantity managed as other waste in off-site treatment, storage, or disposal units	6.0	kg/yr ±	UK %

[ ] Mark (X) this box if you attach a continuation sheet.

10.08 Describe the control technologies used to minimize release of the listed substance for each process stream containing the listed substance as identified in your process block or residual treatment block flow diagram(s). Photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... All

Stream ID Code	Control Technology	Percent Efficiency
All Vent Streams	NONE	0

[ ] Mark (X) this box if you attach a continuation sheet.

PART B RELEASE TO AIR

10.09 Point Source Emissions -- Identify each emission point source containing the listed substance in terms of a Stream ID Code as identified in your process block or residual treatment block flow diagram(s), and provide a description of each point source. Do not include raw material and product storage vents, or fugitive emission sources (e.g., equipment leaks). Photocopy this question and complete it separately for each process type.

CBI

[ ]

Process type ..... Staking, Bonding EN-5

Point Source ID Code	Description of Emission Point Source
7G	Mixing Vent
7M	Loading Vent
7B	Application Vent
7T	Oven Vent
7V	Application Vent
7X	Oven Vent

[ ] Mark (X) this box if you attach a continuation sheet.

10.10 Emission Characteristics - - Characterize the emissions for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

[ ]

Point Source ID Code	Physical State[1]	Average Emissions (kg/day)	Frequency[2] (days/yr)	Duration[3] (min/day)	Average Emission Factor[4]	Maximum Emission Rate (kg/min)	Maximum Emission Rate Frequency (events/yr)	Maximum Emission Rate Duration (min/event)
7G	V	0.00003	145	2	- *	UK	UK	UK
7M	V	0.00003	145	2	-	UK	UK	UK
7R	V	0.00003	145	5	-	UK	UK	UK
7T	V	0.0000006	145	90	-	UK	UK	UK
7V	V	0.00003	145	5	-	UK	UK	UK
7X	V	0.0000006	145	90	-	UK	UK	UK

[1]Use the following codes to designate physical state at the point of release:
G = Gas; V = Vapor; P = Particulate; A = Aerosol; O = Other (specify) _____

[2]Frequency of emission at any level of emission

[3]Duration of emission at any level of emission

[4]Average Emission Factor — Provide estimated (± 25 percent) emission factor (kg of emission per kg of production of listed substance)

* The listed substance is not produced.

[ ] Mark (X) this box if you attach a continuation sheet.

10.11 Stack Parameters -- Identify the stack parameters for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

[ ]

Point Source ID Code	Stack Height(m)	Stack Inner Diameter (at outlet) (m)	Exhaust Temperature (°C)	Emission Exit Velocity (m/sec)	Building Height(m)[1]	Building Width(m)[2]	Vent Type[3]
7G	9.4*	0.36	25	12.7	8.2	122	V
7H	9.4*	0.36	25	12.7	8.2	122	V
7R	9.4*	0.36	25	12.7	8.2	122	V
7T	9.4*	0.36	25	12.7	8.2	122	V
7V	9.4*	0.36	25	12.7	8.2	122	V
7X	9.4*	0.36	25	12.7	8.2	122	V

* Includes height of the building

[1]Height of attached or adjacent building

[2]Width of attached or adjacent building

[3]Use the following codes to designate vent type:

H = Horizontal
V = Vertical

[ ] Mark (X) this box if you attach a continuation sheet.

10.12 If the listed substance is emitted in particulate form, indicate the particle size distribution for each Point Source ID Code identified in question 10.09. Photocopy this question and complete it separately for each emission point source.

CBI

[ ]

Point source ID code ..... No particulate emissi

Size Range (microns)	Mass Fraction (% ± % precision)
< 1	—
≥ 1 to < 10	—
≥ 10 to < 30	—
≥ 30 to < 50	—
≥ 50 to < 100	—
≥ 100 to < 500	—
≥ 500	—

Total = 100%

[ ] Mark (X) this box if you attach a continuation sheet.

PART C FUGITIVE EMISSIONS

10.13 Equipment Leaks -- Complete the following table by providing the number of equipment types listed which are exposed to the listed substance and which are in service according to the specified weight percent of the listed substance passing through the component. Do this for each process type identified in your process block or residual treatment block flow diagram(s). Do not include equipment types that are not exposed to the listed substance. If this is a batch or intermittently operated process, give an overall percentage of time per year that the process type is exposed to the listed substance. Photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... *

Percentage of time per year that the listed substance is exposed to this process type ..... — %

Equipment Type	Number of Components in Service by Weight Percent of Listed Substance in Process Stream					
	Less than 5%	5-10%	11-25%	26-75%	76-99%	Greater than 99%
Pump seals[1]						
Packed	—	—	—	—	—	—
Mechanical	—	—	—	—	—	—
Double mechanical[2]	—	—	—	—	—	—
Compressor seals[1]	—	—	—	—	—	—
Flanges	—	—	—	—	—	—
Valves						
Gas[3]	—	—	—	—	—	—
Liquid	—	—	—	—	—	—
Pressure relief devices[4] (Gas or vapor only)	—	—	—	—	—	—
Sample connections						
Gas	—	—	—	—	—	—
Liquid	—	—	—	—	—	—
Open-ended lines[5] (e.g., purge, vent)						
Gas	—	—	—	—	—	—
Liquid	—	—	—	—	—	—

*"—" means not applicable.

[1]List the number of pump and compressor seals, rather than the number of pumps or compressors

10.13 continued on next page

[ ] Mark (X) this box if you attach a continuation sheet.

10.13 (continued)

[2]If double mechanical seals are operated with the barrier (B) fluid at a pressure greater than the pump stuffing box pressure and/or equipped with a sensor (S) that will detect failure of the seal system, the barrier fluid system, or both, indicate with a "B" and/or an "S", respectively

[3]Conditions existing in the valve during normal operation

[4]Report all pressure relief devices in service, including those equipped with control devices

[5]Lines closed during normal operation that would be used during maintenance operations

10.14 Pressure Relief Devices with Controls -- Complete the following table for those pressure relief devices identified in 10.13 to indicate which pressure relief devices in service are controlled. If a pressure relief device is not controlled, enter "None" under column c.

CBI

[ ]

a. Number of Pressure Relief Devices	b. Percent Chemical in Vessel[1]	c. Control Device	d. Estimated Control Efficiency[2]
*	—	—	—

* "—" means not applicable

[1]Refer to the table in question 10.13 and record the percent range given under the heading entitled "Number of Components in Service by Weight Percent of Listed Substance" (e.g., <5%, 5-10%, 11-25%, etc.)

[2]The EPA assigns a control efficiency of 100 percent for equipment leaks controlled with rupture discs under normal operating conditions. The EPA assigns a control efficiency of 98 percent for emissions routed to a flare under normal operating conditions

[ ] Mark (X) this box if you attach a continuation sheet.

10.15 Equipment Leak Detection -- If a formal leak detection and repair program is in place, complete the following table regarding those leak detection and repair procedures. Photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... ——— *

Equipment Type	Leak Detection Concentration (ppm or mg/m^3) Measured at ___ Inches from Source	Detection Device[1]	Frequency of Leak Detection (per year)	Repairs Initiated (days after detection)	Repairs Completed (days after initiated)
Pump seals					
Packed	—	—	—	—	—
Mechanical	—	—	—	—	—
Double mechanical	—	—	—	—	—
Compressor seals	—	—	—	—	—
Flanges	—	—	—	—	—
Valves					
Gas	—	—	—	—	—
Liquid	—	—	—	—	—
Pressure relief devices (gas or vapor only)	—	—	—	—	—
Sample connections					
Gas	—	—	—	—	—
Liquid	—	—	—	—	—
Open-ended lines					
Gas	—	—	—	—	—
Liquid	—	—	—	—	—

* "———" means not applicable

[1]Use the following codes to designate detection device:

POVA = Portable organic vapor analyzer
FPM = Fixed point monitoring
O = Other (specify) _____

[ ] Mark (X) this box if you attach a continuation sheet.

[ ] Mark (X) this box if you attach a continuation sheet.

10.16 Raw Material, Intermediate and Product Storage Emissions - - Complete the following table by providing the information on each liquid raw material, intermediate, and product storage vessel containing the listed substance as identified in your process block or residual treatment block flow diagram(s). These equipment characteristics do not apply.

CBI

[ ]

Vessel Type[1]	Floating Roof Seals[2]	Composition of Stored Materials[3]	Throughput (liters per year)	Vessel Filling Rate (gpm)	Vessel Filling Duration (min)	Vessel Inner Diameter (m)	Vessel Height (m)	Operating Vessel Volume (l)	Vessel Emission Controls[4]	Design Flow Rate[5]	Vent Diameter (cm)	Control Efficiency (%)	Basis for Estimate[6]
—*	—	—	—	—	—	—	—	—	—	—	—	—	—

*"—" means Not Applicable

[1]Use the following codes to designate vessel type:

F = Fixed roof
CIF = Contact internal floating roof
NCIF = Noncontact internal floating roof
EFR = External floating roof
P = Pressure vessel (indicate pressure rating)
H = Horizontal
U = Underground

[2]Use the following codes to designate floating roof seals:

MS1 = Mechanical shoe, primary
MS2 = Shoe-mounted secondary
MS2R = Rim-mounted, secondary
LM1 = Liquid-mounted resilient filled seal, primary
LM2 = Rim-mounted shield
LMW = Weather shield
VM1 = Vapor mounted resilient filled seal, primary
VM2 = Rim-mounted secondary
VMW = Weather shield

[3]Indicate weight percent of the listed substance. Include the total volatile organic content in parenthesis

[4]Other than floating roofs

[5]Gas/vapor flow rate the emission control device was designed to handle (specify flow rate units)

[6]Use the following codes to designate basis for estimate of control efficiency:

C = Calculations
S = Sampling

10.23 Indicate the date and time when the release occurred and when the release ceased or was stopped. If there were more than six releases, attach a continuation sheet and list all releases.

Release	Date Started	Time (am/pm)	Date Stopped	Time (am/pm)
1	— *	—	—	—
2				
3				
4				
5				
6				

10.24 Specify the weather conditions at the time of each release.

Not Required

Release	Wind Speed (km/hr)	Wind Direction	Humidity (%)	Temperature (°C)	Precipitation (Y/N)
1					
2					
3					
4					
5					
6					

* "—" means not applicable

[ ] Mark (X) this box if you attach a continuation sheet.